

the details and particularity required by the patent laws, what is claimed and desired protected by Letters Patent is set forth in the appended claims.

What is claimed is:

1. A liquid crystal display with an integrated touch sensor comprising:
  - a first substrate including a color filter plate having a first conductive layer formed thereon;
  - a linearization pattern formed on the first conductive layer, wherein the linearization pattern applies voltage gradients across the first conductive layer; and
  - a flexible polarizer having a second conductive layer formed thereon facing the first conductive layer across a gap formed therebetween, the polarizer providing a contact surface such that a touched position on the polarizer causes contact between the first conductive layer and the second conductive layer thereby identifying a location of the touched position.
2. The display as recited in claim 1, wherein the flexible polarizer includes a flexible plastic material.
3. The display as recited in claim 1, wherein the first and second conductive layers include at least one of Indium Tin Oxide and Indium Zinc Oxide.
4. The display as recited in claim 1, wherein the first substrate is a rigid transparent material.
5. The display as recited in claim 1, wherein the linearization pattern is formed about a periphery of the first substrate and includes at least three electrodes for providing the voltage gradient, wherein the linearization pattern applies voltage gradients in two orthogonal directions.
6. The display as recited in claim 1, wherein the polarizer is coupled to the first substrate about a periphery of the first substrate.
7. The display as recited in claim 1, wherein the gap is maintained by employing insulating spacers.
8. The display as recited in claim 7, wherein the spacers are employed to attach the first and second conductive layers.
9. The display as recited in claim 7, wherein the spacers are disposed in operational relationship with a black matrix formed on the first substrate.
10. The display as recited in claim 1, wherein the gap is filled with an insulating index matched liquid to reduce light reflections.
11. A liquid crystal display with an integrated touch sensor comprising:
  - a first substrate including a color filter plate having a first conductive layer formed thereon;
  - a flexible polarizer having a second conductive layer formed thereon facing the first conductive layer across a gap formed therebetween;
  - a linearization pattern formed on the second conductive layer, wherein the linearization pattern applies voltage gradients across the second conductive layer; and
  - the polarizer providing a contact surface such that a touched position on the polarizer causes contact between the first layer and the second layer thereby inducing current flow across electrodes connected to

the second conductive layer thereby identifying a location of the touched position.

12. The display as recited in claim 11, wherein the flexible polarizer includes a flexible plastic material.

13. The display as recited in claim 11, wherein the first and second conductive layers include at least one of Indium Tin Oxide and Indium Zinc Oxide.

14. The display as recited in claim 11, wherein the first substrate is a rigid transparent material.

15. The display as recited in claim 11, wherein the linearization pattern is formed on the second conductive layer about a periphery of the polarizer and the electrodes include four electrodes, wherein the linearization pattern applies voltage gradients in two orthogonal directions.

16. The display as recited in claim 11, wherein the gap is maintained by employing insulating spacers.

17. The display as recited in claim 16, wherein the spacers are employed to attach the first and second conductive layers.

18. The display as recited in claim 16, wherein the spacers are disposed in operational relationship with a black matrix formed on the first substrate.

19. The display as recited in claim 11, wherein the gap is filled with an insulating index matched liquid to reduce light reflections.

20. A liquid crystal display with an integrated touch sensor comprising:

- a first substrate including a color filter plate having a first conductive layer formed thereon;
- a flexible polarizer having a second conductive layer formed thereon facing the first conductive layer across a gap formed therebetween, the polarizer providing a contact surface such that a touched position on the polarizer causes contact between the first conductive layer and the second conductive layer thereby identifying a location of the touched position by a first voltage gradient being provided across the first conductive layer while the second conductive layer is employed as a sensor layer for the touched position and a second voltage gradient being provided orthogonally to the first voltage gradient across the second conductive layer while the first conductive layer is employed as the sensor layer for the touched position; and
- an insulating index matched liquid disposed in the gap to reduce light reflections.

21. The display as recited in claim 20, wherein the flexible polarizer includes a flexible plastic material.

22. The display as recited in claim 20, wherein the first and second conductive layers include at least one of Indium Tin Oxide and Indium Zinc Oxide.

23. The display as recited in claim 20, wherein the color filter plate is formed from a rigid transparent material.

24. The display as recited in claim 20, wherein at least three electrodes provide the voltage gradients.

25. The display as recited in claim 20, wherein spacers are employed to attach the first and second conductive layers.